

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:	:
Hoke et al.	:
	:
Application No.: 09/766,723	: Group Art Unit: 1744
	: Examiner: K. Jastrzab
Filed: January 22, 2001	: Confirmation No. 2047
	:
For: Method and Apparatus for Treating the	:
Atmosphere	:

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**Alexandria, VA 22313-1450**

**REPLY (SUBSTITUTE BRIEF)**

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### **Real Party in Interest**

The real party in interest in this proceeding is BASF Catalysts LLC, the predecessor in interest to the Assignee of record, Engelhard Corporation.

### **Related Appeals and Interferences**

Neither Appellant nor its agents are aware of any prior or pending appeals, judicial proceedings or interferences which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

### **Status of Claims**

Claims 49-60 stand finally rejected under 35 U.S.C. § 103(a) and are appealed. Claims 1-48 have been cancelled. A copy of the claims on appeal are in the Claim Appendix of this Brief.

### **Status of Amendments**

No amendments have been submitted since receipt of the Final Office Action (Office Action) mailed on September 6, 2006.

### **Summary of Claimed Subject Matter**

Claim 49 is directed to an apparatus for treating the atmosphere comprising an outdoor component of an HVAC system bearing an ozone treating catalyst, said outdoor component being operatively attached to an immovable structure. (Page 5, lines 24-32; page 17, lines 35 through page 18, line 8).<sup>1</sup>

Claim 50 depends from claim 49 and further recites that the outdoor component of an HVAC system is part of an air conditioner condenser. (Page 17, lines 35-36).

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<sup>1</sup> Page and paragraph designations refer to those found in the originally filed specification.

Independent claim 51 is directed to an apparatus for treating the atmosphere comprising a substrate bearing an ozone treatment catalyst added to an outdoor component of an HVAC system, said outdoor component being operatively attached to an immovable structure. (Page 5, lines 24-32; page 17, lines 35 through page 18, line 8). Claim 52 depends from claim 51 and recites that the outdoor component of an HVAC system is an outdoor air conditioner condenser. (Page 17, line 36).

Claim 53 depends from claim 50 and recites that the apparatus further comprises a device for actively drawing or forcing ambient air into operative contact with ozone treating catalyst. (Page 18, lines 1-4). Claim 54 depends from claim 53 and recites that the apparatus comprises an air handling system, and the ozone treating catalyst is disposed on an air contacting surface of a component of said air handling system. (Page 17, lines 23-28). Claim 55 depends from claim 54 and recites that the air handling system comprises a fan which has fan blades and the ozone treating catalyst is disposed on the fan blades. (Page 18, lines 5-8). Claim 56 depends from claim 54 and recites that the air handling system comprises one or more components selected from the group consisting of filters, screens and grills, and the ozone treating catalyst is disposed on one or more air contacting surfaces of said components. (Page 18, lines 5-8).

Claim 57 depends from claim 54 and recites that the air handling system comprises a heat exchanger having a heat transfer surface and the ozone treating catalyst is disposed on the heat transfer surface or on an air contacting surface of a component downstream from the heat transfer surface. (Page 18, lines 5-8). Claim 58 depends from claim 54 and recites that the air contacting surface is one which is at a temperature above 25°C. during at least a period of normal operation of said air handling system. (Page 18, lines 13-16). Claim 59 depends from claim 54 and recites that the stationary air handling system is for facilities selected from the group consisting of residential buildings, commercial buildings, industrial buildings, power plants, oil refineries, and chemical plants, and the air handling system comprises a substrate selected from the group consisting of fan blades, ducts, louvers, grills, motor housings, filtration media, screens, coils, fins and plates. (Page 17, line 21 through Page 18, line 8). Claim 60 depends from claim 59 and recites that the ozone treating catalyst comprises manganese oxide. (Page 9, lines 8-10).

**Grounds of Rejection to be Reviewed on Appeal**

- I. Whether claims 49-59 are unpatentable under 35 U.S.C. § 103(a) over U.S. Patent No. 5,711,071 (Fromson) in view of Abstract of DE 4007964 (Hager).
- II. Whether, claims 49-59 are unpatentable under 35 U.S.C. § 103(a) over EP 634205 (Beitz).<sup>2</sup>

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<sup>2</sup> The claims were also rejected for obviousness-type double patenting. This rejection is not appealed, and upon indication of an allowable claim, Appellant will submit a properly signed terminal disclaimer.

### **Argument I**

Claims 49-59 in this application stand finally rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over U.S. Patent No. 5,711,071 (Fromson) in view of Abstract of DE 4007964 (Hager).

To establish a *prima facie* case of obviousness, three basic criteria must be met. There must be some suggestion or motivation from the references themselves or the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be in the prior art, and not in the Appellants' disclosure. Third, prior art references must teach or suggest all the claim limitations. (MPEP § 2142).

### **Claims 49-50**

Claims 49 and 50 require apparatus for treating the atmosphere comprising an outdoor component of an HVAC system bearing an ozone treating catalyst, said outdoor component being operatively attached to an immovable structure. Claim 50 requires the outdoor component of an HVAC system is part of an air conditioner condenser.

The Office Action relies on Fromson for the teaching of application of a catalytic coating to the surfaces of automobile radiators or air conditioning condensers. Hager is relied upon for the teaching of application of a catalytic coating on outdoor surfaces such as those of buildings to remove ozone from the surrounding atmosphere to prevent smog formation. According to the Office Action, "It would have been obvious to one of ordinary skill in the art to form a catalyst

coating on the outdoor components of a building HVAC system, such as the condenser, as applied to the equivalent vehicular components as taught in Fromson et al., because it would act to remove ozone from the surrounding atmosphere and reduce smog formation by placement on the building structures as taught in Hager.” (Office Action, Page 3, paragraph 3).

Appellant respectfully submits that the Office Action has relied on improper hindsight or obvious to try rationale in rejecting the claims. First, according to MPEP 2144.06, “[i]n order to rely on equivalence as a rationale supporting an obviousness rejection, the equivalency must be recognized in the prior art, and cannot be based on applicant's disclosure or the mere fact that the components at issue are functional or mechanical equivalents.” In the instant case, the Office Action concludes that the radiator components or air conditioning condenser components on an automobile are equivalent to the structures recited in claims 49 and 50. Appellant respectfully submits that the components of an automobile encounter vastly different conditions in terms of air space velocity and temperature compared to the air space velocity and temperature conditions encountered by a component of an HVAC system attached to an immovable structure such as a residential or commercial building. Appellant's conducted numerous experiments as outlined in the Examples of Appellant's specification “to determine whether the catalyst is suitable for treating the particular gaseous pollutants under ambient conditions” at various locations. (Page 59, lines 21-26). Thus, according to the claimed invention, components of an HVAC system were chosen because ambient air is blown or forced over external heat transfer surfaces such as cooling coils or fins to enhance treatment of atmosphere air. At most, the rejection in the Office Action represents that it would have been obvious to try placing an ozone-treating catalyst on the surface of an outdoor component of an HVAC system.

For at least the reasons provided above with respect to claims 49-50, the rejection should be reversed.

### **Claims 51-52**

Claims 51 and 52 require a substrate bearing an ozone treatment catalyst added to an outdoor component of an HVAC system. An advantage of having a separate substrate can be removably mounted for replacement, rejuvenation or cleaning. (Page 26, lines 19-21). No such structure is taught or recited in the combined teachings of the cited references, and for at least this reason, the rejection should be reversed.

### **Claims 53-59**

Claim 53 depends from claim 50 and further requires a device for actively drawing or forcing ambient air into operative contact with ozone treating catalyst. Claim 54 further recites an air handling system, and the ozone treating catalyst is disposed on an air contacting surface of a component of said air handling system. Claims 55 and 56 recite specific items such as fans, fan blades, filters, screens and grills. None of these structures are taught or suggested in either of the references cited in the Office Action, and the Office Action fails to state why it would have been obvious to dispose the catalyst on these structures. For at least this reason, the rejection should be reversed.

### **Argument II**

Claims 49-59 in this application stand finally rejected, in the alternative, under 35 U.S.C. § 103(a) as allegedly unpatentable over EP 634205 (Beitz).

### **Claims 49-59**

Appellant's specification at page 6, lines 33-37, which emphasizes a key aspect of the claimed invention is the treatment of the atmosphere in general as opposed to treating an airstream being drawn or forced out of a confined space, such as a building. The Office Action cites EP634205 for the teaching that an ozone decomposing catalyst can be incorporated onto equipment in air conditioning and ventilating equipment. The Office Action admits that EP634205 fails to teach that the catalyst is incorporated onto an outdoor component of the air conditioning and ventilating system, but maintains that since it is commonly recognized that the atmosphere contains ozone, it would have been obvious to incorporate the catalyst in EP634205



onto an outdoor component of an air conditioner "because it would combat the influx of ozone into an air-conditioned residence." (Office Action, Page 4, paragraph 4).

The abatement of ozone from the atmosphere by a catalyst borne on an outdoor component of an HVAC system or on a substrate added to the component does not result in the treated atmospheric air being drawn into an air-conditioned residence, as asserted by the in the Office Action. As noted in Appellant's specification at page 25, the treated ambient air according to applicants' claimed invention is returned to the atmosphere, not delivered into an air-conditioned residence. Thus, modification of the EP634205 as suggested by the Examiner would destroy the intended function of the device in EP634205.

As stated in MPEP Section 2143.01, if "the proposed modification of a reference would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." *See In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984) (quoted in MPEP Section 2143.01) (Claimed device was a blood filter assembly for use during medical procedures wherein both the inlet and outlet for the blood were located at the bottom end of the filter assembly, and wherein a gas vent was present at the top of the filter assembly. The prior art reference taught a liquid strainer for removing dirt and water from gasoline and other light oils wherein the inlet and outlet were at the top of the device, and wherein a pet-cock (stopcock) was located at the bottom of the device for periodically removing the collected dirt and water. The reference further taught that the separation is assisted by gravity. The Board concluded the claims were *prima facie* obvious, reasoning that it would have been obvious to turn the reference device upside down. The court reversed, finding that if the prior art device was turned upside down it would be inoperable for its intended purpose because the gasoline to be filtered would be trapped at the top, the water and heavier oils sought to be separated would flow out of the outlet instead of the purified gasoline, and the screen would become clogged.). Thus, because the proposed modification of the system in EP634205 as set forth in the Office Action would result in destroying the intended function of treating the indoor air, a *prima facie* case of obviousness has not been established.

In addition, EP634205 is directed to catalysts that are used at ambient temperatures and below, whereas in the present invention, the catalysts of the present invention work with high bulk air movement and/or elevated temperatures associated with components such as air conditioner condensers. EP634205 does not teach or suggest an apparatus that works with such components. Furthermore, applicants respectfully submit that the skilled artisan would not be

motivated to move the catalysts associated with an indoor component or an automobile air conditioner to an outdoor component of an air conditioning system that is subjected to different airflow conditions, temperatures and other environmental conditions that may degrade the catalyst. Applicants respectfully request withdrawal of the rejection.

### Conclusions

In view of the foregoing, claims 49-59 are not obvious over U.S. Patent No. 5,711,071 (Fromson) in view of Abstract of DE 4007964 (Hager).

In view of the foregoing, claims 49-59 are not obvious over Beitz.

The undersigned was authorized by Richard A. Negin, Reg. No. 28,649, an attorney of record in the subject application, to prepare and file this Appeal Brief on behalf of the Assignee. Correspondence should be directed to Chief Patent Counsel, BASF Catalysts LLC, 101 Wood Avenue, P.O. Box 770, Iselin, NJ, 08830-0770.

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## **Claims Appendix**

49. An apparatus for treating the atmosphere comprising an outdoor component of an HVAC system bearing an ozone treating catalyst, said outdoor component being operatively attached to an immovable structure.
50. The apparatus of claim 49, wherein the outdoor component of an HVAC system is part of an air conditioner condenser.
51. An apparatus for treating the atmosphere comprising a substrate bearing an ozone treatment catalyst added to an outdoor component of an HVAC system, said outdoor component being operatively attached to an immovable structure.
52. The apparatus of claim 51, wherein the outdoor component of an HVAC system is an outdoor air conditioner condenser.
53. The apparatus of claim 50 further comprising a device for actively drawing or forcing ambient air into operative contact with ozone treating catalyst.
54. The apparatus of claim 53, wherein the apparatus comprises an air handling system, and the ozone treating catalyst is disposed on an air contacting surface of a component of said air handling system.
55. The apparatus of claim 54, wherein the air handling system comprises a fan which has fan blades and the ozone treating catalyst is disposed on the fan blades.
56. The apparatus of claim 54, wherein the air handling system comprises one or more components selected from the group consisting of filters, screens and grills, and the ozone treating catalyst is disposed on one or more air contacting surfaces of said components.
57. The apparatus of claim 54, wherein the air handling system comprises a heat exchanger having a heat transfer surface and the ozone treating catalyst is disposed on the heat transfer

surface or on an air contacting surface of a component downstream from the heat transfer surface.

58. The apparatus of claim 54, wherein the air contacting surface is one which is at a temperature above 25°C. during at least a period of normal operation of said air handling system.

59. The apparatus of claim 54, wherein the stationary air handling system is for facilities selected from the group consisting of residential buildings, commercial buildings, industrial buildings, power plants, oil refineries, and chemical plants, and the air handling system comprises a substrate selected from the group consisting of fan blades, ducts, louvers, grills, motor housings, filtration media, screens, coils, fins and plates.

60. The apparatus of claim 59, wherein at said ozone treating catalyst comprises manganese oxide.

## Evidence Appendix

None.

**Related Proceedings Appendix**

None.